



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,464	06/23/2003	Masahiro Kawaguchi	1232-5069	3975

27123 7590 02/04/2008
MORGAN & FINNEGAN, L.L.P.
3 WORLD FINANCIAL CENTER
NEW YORK, NY 10281-2101

EXAMINER

FORMAN, BETTY J

ART UNIT	PAPER NUMBER
----------	--------------

1634

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

02/04/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOPatentCommunications@Morganfinnegan.com
Shopkins@Morganfinnegan.com
jmedina@Morganfinnegan.com

Office Action Summary	Application No. 10/602,464	Applicant(s) KAWAGUCHI, MASAHIRO	
	Examiner BJ Forman	Art Unit 1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2007.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) 4-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

FINAL ACTION

Status of the Claims

1. This action is in response to papers filed 1 November 2007 in which claim 1 was amended and claim 18 was added. The amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 17 July 2007 are withdrawn in view of the amendments. Applicant's arguments have been thoroughly reviewed but are deemed moot in view of the amendments, withdrawn rejections and new grounds for rejection.

New grounds for rejection, necessitated by the amendments, are discussed.

Claims 1-3, 16-18 are under prosecution.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiyama et al (U.S. Patent No. 6,346,383, issued 12 February 2002) in view of Mitsuhashi (WO 00/69561, published 23 November 2000). and St. George (PCR: Running Hot and Fast, Science, Statistical Software Supplement, 27 February 1997) and www.labtrade.com.

Regarding Claims 1, 17 and 18, Kajiyama et al teach a device comprising a reaction unit having a nucleic acid probe array (1) having nucleic acid probes immobilized on a surface of the array, a cover (27), for forming a chamber with the surface so as to permit liquid to fill the chamber and contact the probes and a heat conduction member in contact with the substrate for thermal diffusion in the liquid (4/5 island w/heater circuit)(Column 8, lines 44-

67 and Fig. 1). Kajiyama et al further teach the device comprising a temperature control block (mesh structure, 41) for controlling temperature of the heat conducting member, wherein the heat conducting member include projections (#4, islands, also numbered 21, Fig. 4), which is reasonably interpreted as a "leg" and wherein the temperature control block is in contact with the substrate (Fig. 1-5). Kajiyama et al also teach the device wherein the projecting islands (21, Fig. 4) are surrounded by a mesh structure (41) that provides an insulating matrix of holes through which the islands project (see back side of substrate illustrated in Fig. 4A).

The claim defines the leg of the heat conducting member as being adapted for insertion into and in close contact with one of the holes of the temperature control block. Kajiyama et al does not teach the substrate has both holes for tubes and a probe array.

Mitsuhashi teaches a heat conduction adapter for improved heat conduction wherein the heat blocks comprises a universal adapter having liquid metal for holding any platform (page 10-11, Fig. 1 & 8). Kajiyama and Mitsuhashi do not specifically teach a heat block with holes for tubes and a nucleic acid array substrate.

However, dual heat blocks were well known and routinely practiced in the art at the time the claimed invention was made as taught by St. George as defined by the labtrade website.

St. George (page 8) teaches a thermocycler (PTC 200 DNA Engine) that holds multiple dual-mode inserts so as to accommodate any PCR application "the world has to offer". The labtrade website defines the dual mode insert holds both slide and tubes (see printout from website).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the PCT 200 DNA dual-mode insert to the device of Kajiyama or Mitsuhashi. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success and for the benefit of having a device that accommodates any PCR application (St. George).

Regarding Claim 2, Mitsuhashi teaches heat conduction is a universal adapter having liquid metal for holding any platform e.g. multiwell plates (page 10-11, Fig. 1 & 8)

Regarding Claims 3 and 16, Kajiyama et al teach the device wherein the heat conducting member is formed of a metal i.e. heater circuit of electrodes & wires (Column 13, lines 1-52). And Mitsuhashi teach a heat conduction adapter having liquid metal for holding any platform (page 10-11, Fig. 1 & 8).

4. Claims 1-3, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kain et al (U.S. Patent Application Publication No. 2002/0039728, filed 12 February 2001) in view of St. George (PCR: Running Hot and Fast, Science, Statistical Software Supplement, 27 February 1997) and www.labtrade.com.

Regarding Claims 1 and 17, Kain et al teach a device comprising a reaction unit having a substrate (§ 128-129) having nucleic acid probes immobilized on a surface of the array (§ 149), a cover (10, § 101), for forming a chamber with the surface so as to permit liquid to fill the chamber a heat conduction member (heat transfer features, § 119-120) and temperature control block (§ 130) including a plurality of holes for inserting tubes (§ 129) wherein the heat conduction member includes a leg for insertion into the holes (alignment pins, § 122)(Fig. 7-8).

Regarding Claim 2, Kain teaches the heat block is adapted to receive a microtube (§ 128-129).

Regarding Claims 3 and 16, Kain teaches the device wherein the heat conduction member is formed of metal (§ 97 and 121).

Kain teaches the reaction unit is adaptable for any substrate e.g. plate of tube (pp 128-129) but does not teach the substrate has both holes for tubes and a probe array.

However, dual heat blocks were well known and routinely practiced in the art at the time the claimed invention was made as taught by St. George as defined by the labtrade website.

St. George (page 8) teaches a thermocycler (PTC 200 DNA Engine) that holds multiple dual-mode inserts so as to accommodate any PCR application "the world has to offer". The labtrade website defines the dual mode insert holds both slide and tubes (see printout from website).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the PCT 200 DNA dual-mode insert to the device of Kain. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success and for the benefit of having a device that accommodates any PCR application (St. George).

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

6. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

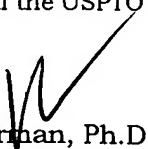
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.



BJ Forman, Ph.D.
Primary Examiner
Art Unit: 1634
January 30, 2008